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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,333

05/24/2006

Shigeru Uzawa

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RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

EXAMINER

THOMAS, ERIC W

ART UNIT

PAPER NUMBER

2831

MAIL DATE

DELIVERY MODE

04/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,333	Applicant(s) UZAWA ET AL.	
	Examiner Eric Thomas	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/10/09 has been entered.

INTRODUCTION

The examiner acknowledges, as recommended in the MPEP, the applicant's submission of the amendment dated 2/24/09. At this point, claim 20 has been amended, claims 1-19 have been cancelled, and claims 29-42 have been added. Claims 20-42 are pending in the instant application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

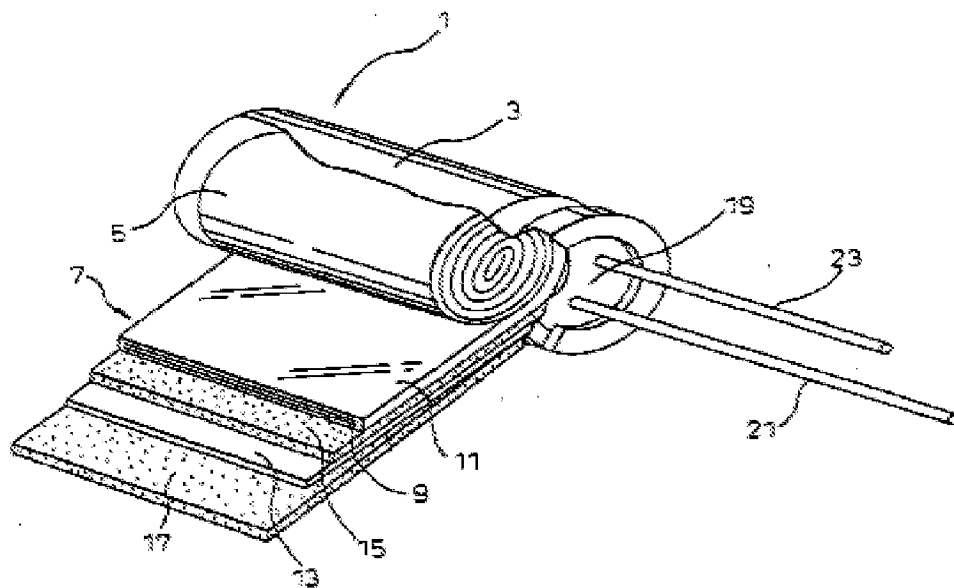
3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 20, 25, 27-28, 30-34, 37-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2003-197479) - see US 2005/0094352 in view of Komatsu (US 6,349,028).

Fig.1



Komatsu et al. disclose in fig. 1, an electrolytic capacitor comprising a capacitor element (5), a case (3) containing the capacitor element, and a sealant (19) with which the case is sealed, the capacitor element comprising a pair of electrode foils (11, 13) each comprising a dielectric, a separator (15) for isolating the electrode foils from each other, and an electrolytic solution filled between the electrode foils, wherein the

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electrolytic solution comprising a solvent and a solute, wherein water accounts for from more than 80% to 100% by weight of the solvent, the solute is selected from a carboxylic acid or a salt thereof and an inorganic acid or a salt thereof (claim 5, claim 6), and further comprises one or more compounds selected from a nitro compound, a nitroso compound or a salt thereof, a chelate forming compound or a salt thereof, saccharides, a phosphoric acid compound or a derivative thereof, a water-soluble polymer and a silane coupling agent alone or in combination, and the total solute content is from 1.5 to 44% by weight (claims 5, 6), and in which the content of the carboxylic acid-based electrolytes is within a range from 0.5 to 35 % by weight (claim 6), and wherein the electrolytic solution has a specific resistance at 30°C of 65 Ω cm or less.

Komastu et al. disclose the claimed invention except for the sealant comprising isoprene-isobutylene rubber.

Komastu discloses an electrolytic capacitor comprising an isobutylene-isoprene rubber (IIR) sealant.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the capacitor of Komastu et al. using the sealant of Komastu ('028) , since such a modification would form a capacitor having a sealant material with "high heat resistance and air tightness."

Regarding claim 25, Komatsu teaches that the sealant comprises a resin-vulcanized isoprene-isobutylene rubber or a peroxide-vulcanized isobutylene isoprene rubber.

Regarding claim 27, Komatsu et al. disclose the capacitor can be used at a temperature of -40 degrees C or higher.

Regarding claims 28, Komatsu et al. disclose the capacitor can be used at a temperature of -25 degrees C or higher.

Regarding claim 30, Komatsu et al. disclose the solvent comprises monohydric alcohol [0029]

Regarding claim 31, Komatsu et al. disclose the total solute content is from 23.5 to 44 % weight (claim 6).

Regarding claim 32, Komatsu et al. disclose the solute content is from 1.5 to 5 % by weight (claim 5).

Regarding claim 33, Komatsu et al. disclose the carboxylic acid is formic acid [0023].

Regarding claim 34, Komatsu et al. disclose the inorganic acid is selected from the group consisting of carbonic acid, hypophosphorous acid, phosphorous acid, phosphoric acid, boric acid and sulfamic acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 1 to 20% by weight based on the total amount of the electrolytic solution (see claim 11, claim 3).

Regarding claim 37, Komatsu et al. disclose the nitro compound is selected from the group consisting of nitrophenol, dinitrophenol, nitrobenzoic acid, dinitrobenzoic acid, trinitrobenzoic acid, nitroanisole, nitroacetophenone, aminonitrobenzoic acid, nitrosalicylic acid and nitroguanidine, and a salt or derivative thereof, and the nitroso

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compound is selected from the group consisting of nitrosobenzoic acid, nitrosonaphthol, nitrosophenol and copperon, and a salt or derivative thereof [0049].

Regarding claim 38, Komatsu et al. disclose the nitro compound and/or the nitroso compound is/are contained in the amount of 0.05 to 10% by weight based on the total amount of the electrolytic solution [0048].

Regarding claim 39, Komatsu et al. disclose the chelete forming compound is selected from the group consisting of ethylenediaminetetraacetic acid, trans-1,2-diaminocyclohexane-N,N,N',N'-tetraacetic acid monohydrate, dihydroxyethylglycine, ethylenediaminetetrakis(methylenesulfonic acid), diethylenetriamine-N,N,N',N''-N''-pentaacetic acid, citric acid, diaminopropanoltetraacetic acid, ethylenediaminediacetic acid, ethylenediamine-N,N'-bis(methylenesulfonic acid) 1/2 hydrate, glycol ether diaminetetraacetic acid and hydroxyethylethylenediaminetriacetic acid [0043].

Regarding claim 40, Komatsu et al. disclose the chelete forming compound is contained in the amount of 0.01 to 5 % by weight based on total amount of the electrolytic solution [0043]-[0046].

Regarding claim 41, Komatsu et al. disclose the saccharides are selected from the group consisting of monosaccharides, disaccharides, trisaccharides, polysaccharides, and a derivative thereof [0044].

Regarding claim 42, Komatsu et al. disclose the saccharides are contained in the amount of 0.01 to 10% by weight based on the total amount of the electrolytic solution [0044].

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5. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2003-197479) and Komatsu (US 6,349,028) as applied to claim 20 above, and further in view of Hayashi et al. (EP 0569938).

Regarding claim 21, Komatsu et al. disclose the claimed invention except that the separator of the capacitor has a density of 0.5 or less.

Hayashi et al. teach the use of a separator for an electrolytic capacitor, wherein the density of the separator is 0.5 or less (see abstract).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hayashi et al. in the capacitor of Komatsu et al., since such a modification would form the capacitor with a separator having excellent workability.

Regarding claim 22, Hayashi et al. teach that the separator comprises fibers fixed with a binder soluble in the electrolytic solution.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2003-197479) and Komatsu (US 6,349,028) as applied to claim 20 above, and further in view of JP 2000-150322 ('322).

Komatsu et al. disclose the claim invention except that the case is made of a non-treated aluminum having purity of 99.0% or higher.

'322 teaches that 1100 grade aluminum is commonly used in the fabrication of electrolytic capacitor housings.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the housing from a 1100 grade aluminum material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2003-197479) and Komatsu (US 6,349,028) as applied to claim 20 above, and further in view of Takeishi et al. (US 6,031,713).

Regarding claim 24, Komatsu et al. disclose in the claimed invention except that the case is made of an aluminum alloy containing manganese and/or magnesium.

Takeishi et al. teach that electrolytic capacitor housings formed from an aluminum alloy containing manganese are stronger than conventional aluminum housings.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the capacitor casing of Komatsu et al. using an aluminum alloy containing manganese as taught by Takeishi et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2003-197479) and Komatsu (US 6,349,028) as applied to claim 20 above, and further in view of Poole (US 4,037,142).

Komatsu et al. disclose the claimed invention except that the external terminals are formed from copper wire.

Poole teaches the use of copper wires used in the fabrication of an electrolytic capacitor.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the external terminals of Pool et al. in the capacitor of Komastu et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

9. Claims 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2003-197479) and Komatsu (US 6,349,028) as applied to claim 20 above, and further in view of JP 2002-217067 ('067).

Regarding claims 12 and 13, Komatsu et al. disclose the claim invention except that a water soluble polymer is contained in the electrolyte. The water soluble polymer is a synthetic or natural polymer having a molecular weight of 100 to 2,000,000.

'067 teaches that adding polyacrylic acid (molecular weight of 100 to 2,000,000) to an electrolyte containing ethylene glycol improves the electrical properties of the capacitor.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the electrolyte of Komatsu et al. using a small amount of polyacrylic acid (molecular weight 100 to 2,000,000), since such a modification would lower specific resistance of the capacitor.

10. Claim 20 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (JP 2004-031983) in view of Komatsu (US 6,349,028) and Ross et al. (US 4,479,167).

Komatsu discloses an electrolytic capacitor comprising a capacitor element, and a case containing the capacitor element, and a sealant (@19) with which the case is sealed, the capacitor element comprising a pair of electrode foils, the anode comprising a dielectric, a separator for isolating the electrode foils from each other, and an electrolytic solution filled between the electrode foils, wherein an electrolyte comprising a solvent and a solute, wherein water accounts for from more than 80% to 100% by weight of the solvent (abstract), the solute is an inorganic acid (abstract), and further comprises one or more compounds selected from a nitro compound, a nitroso compound or a salt thereof, a chelete forming compound or a salt thereof, saccharides, a phosphoric acid compound or a derivative thereof, a water-soluble polymer and a silane coupling agent alone or in combination (paragraph 60), and the total solute content is from 1.5 to 44% by weight(14.4 % - paragraph 60), and wherein the electrolytic solution has a specific resistance at 30°C of 65 Ω cm or less.

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Komatsu ('983) discloses the claimed invention except for the cathode foil comprising a dielectric oxide formed on a surface thereof, and a sealant material that seals the electrolytic capacitor case.

Komastu discloses an electrolytic capacitor comprising an isobutylene-isoprene rubber (IIR) sealant.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the capacitor of Komastu et al. using the sealant of Komastu ('028) , since such a modification would form a capacitor having a sealant material with "high heat resistance and air tightness."

Ross et al. discloses an electrolytic capacitor wherein an oxide layer is formed on a cathode foil.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form an oxide layer on the cathode foil of Komastu as taught by Ross et al., since such a modification will improve the electrical properties of the capacitor.

Regarding claim 29, Komatsu discloses the water content is from more than 90 % by weight to 100 % by weight based on the solvent (see abstract).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Thomas/
Primary Examiner, Art Unit 2831